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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/670,616	09/27/00	NISHIKAWA	M 058116

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SUGHRUE MION ZINN MACPEAK & SEAS
2100 PENNSYLVANIA AVENUE N W
WASHINGTON DC 20037-3202

EXAMINER

BERNATZ, K

ART UNIT

PAPER NUMBER

1773

DATE MAILED:

10/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/670,616	Applicant(s) NISHIKAWA ET AL.	
	Examiner Kevin M Bernatz	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 9-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract of the disclosure is now limited to 150 words or 15 lines (37 CFR 1.72). See MPEP § 608.01(b).

The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: page 3, line 20: missing "a" between "with" and "Cr"; same on page 3, line 24; and page 3, line 28: missing "a" between "with" and "thickness".

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Should an excessive amount of errors be found, applicants are recommended to submit a substitute specification.

Claim Objections

4. Claims 9 – 19 are objected to because of the following informalities: improper grammar – insert “a” between “with” and “Cr” on line 2. Appropriate correction is required.

5. Claim 20 is objected to because of the following informalities: improper grammar – insert “a” before “Cr” both times on line 3 and also on line 5; insert “a” before “Co-Cr” on line 4; insert “a” after “with” on line 8; insert “the” after “whereby” on line 8; insert “the” before “linear” on line 9; and insert “the” before “tensile” on lines 11 and 12.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2, 3, 7, 11, 17 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "heat resistant polymer" in claim 2 is a relative term which renders the claim indefinite. The term "heat resistant" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 3 recites the limitation "the flattening layer" in line 2. There is insufficient antecedent basis for this limitation in the claim since claim 1 does not refer to a flattening layer.

Claims 7, 11 and 17 depend on claim 3 and are indefinite because the examiner cannot reasonably ascertain the intended limitations of claim 3. The examiner notes that had claim 3 merely depended on claim 2, which positively recites the existence of the flattening layer, claim 3 would be an exact duplicate of claim 4.

Claim 20 recites the limitation "the metal seed layer" in lines 10 and 13. There is insufficient antecedent basis for this limitation in the claim. This rejection can be overcome by removing the limitation "metal" from before "seed layer".

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. Claims 1, 9 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Okuyama et al. (U.S. Patent No. 6,071,607).

Regarding claim 1, the claimed invention reads on Okuyama et al. as follows: Okuyama et al. disclose a floppy disk, comprising a primer layer, a magnetic layer, a protective layer, and a lubricating layer coated on at least one of the surfaces of a nonmagnetic support member, whereby a seed layer is provided between the support member and the primer layer (col. 9, lines 20 – 29; col. 10, lines 35 – 40; col. 11, lines 36 – 67; col. 15, line 43 bridging col. 16, line 20; and Figure 25). The term “floppy” and “flexible” were interpreted to mean any non-glass, ceramic, silicon or carbon substrate (see Okuyama et al., col. 10, lines 35 – 40).

Regarding claims 9 and 15, Okuyama et al. disclose magnetic layer and primer layer compositions meeting applicants' claimed limitations (Figure 25).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 4 – 6, 8, 10, 12 – 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuyama et al. as applied to claims 1, 9 and 15 above, and further in view of Hosoi et al. (U.S. Patent No. 5,702,794).

Okuyama et al. disclose the claimed invention as described above with regard to base claim 1.

Okuyama et al. fail to disclose a flattening layer, nor the thickness of the substrate or flattening layer.

However, Hosoi et al. teach a polymer substrate for a magnetic recording medium comprising a nonmagnetic support member and a flattening layer meeting applicants' claimed thickness limitations for use as a base film for a magnetic recording medium that has excellent running properties, abrasion resistance and is superior in calendering treatment (col. 1, lines 51 – 67; col. 2, lines 1 – 22; col. 3, lines 42 – 61; and col. 5, lines 21 – 24).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Okuyama et al. to use the polymer substrate comprising a nonmagnetic support member and a flattening layer meeting applicants' claimed limitations as taught by Hosoi et al. in order to produce a magnetic recording medium that has excellent running properties, abrasion resistance and is superior in calendering treatment.

Regarding claims 4 – 6 and 8, Hosoi et al. disclose a polymer substrate meeting applicants' claimed thickness limitations (see cited sections above).

Regarding claims 10, 12 – 14, 16, 18 and 19, Okuyama et al. disclose magnetic layer and primer layer compositions meeting applicants' claimed limitations (Figure 25).

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okuyama et al. ('607) in view of Hosoi et al. ('794) and further in view of Okudaira et al. (U.S. Patent No. 4,735,853) and Maro et al. (U.S. Patent No. 6,027,801).

Okuyama et al. in view of Hosoi et al. disclose the claimed invention as described above. Okuyama et al. further disclose seed layers meeting applicants' claimed thickness limitation (Figure 25).

Neither Okuyama et al. nor Hosoi et al. disclose the linear expansion coefficient of the metal seed layer and the linear expansion coefficient of the nonmagnetic primer layer satisfying the claimed relation.

However, Maro et al. teach that it is known in the art that differences in thermal expansion can cause cracks to occur on the medium (col. 2, lines 9 – 13). Furthermore, Maro et al. teach that adding metallic buffer films between the substrate and the magnetic layer results in a reduction in the formation of cracks (col. 2, lines 14 – 17). Finally, Maro et al. teach that Ti (i.e. the seed layer used by Okuyama et al.) is equivalent to the seed layers disclosed by applicant (col. 4, lines 37 – 47). Given the teachings of Maro et al., the examiner deems that the disclosed Ti seed layer would meet applicants' claimed limitation and furthermore, one of ordinary skill in the art would have been motivated to optimize the linear expansion coefficients of the two layers such that they would be as close as possible to avoid the formation of cracks in the recording medium, as taught by Maro et al. (col. 2, lines 9 – 13).

It would therefor have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the relative linear expansion coefficients through routine experimentation in the absence of a showing of criticality in the claimed linear expansion coefficients. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

None of Okuyama et al., Hosoi et al., nor Maro et al. disclose the tensile strength of the metal seed layer and the tensile strength of the nonmagnetic primer layer satisfying the claimed relation.

However, Okudaira et al. teach that having a seed layer having a high tensile strength formed over a substrate results in a magnetic recording medium having excellent impact resistance **and** resistance to the formation of cracks and blisters (col. 4, lines 46 – 58).

It would therefor have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the relative tensile strengths of the seed layer and primer layer through routine experimentation in the absence of a showing of criticality in the claimed relative tensile strengths, given the teachings of Okudaira et al. which teach having a high tensile strength seed layer for improved crack and blister resistance. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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305-6078 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



KMB
October 19, 2001



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700